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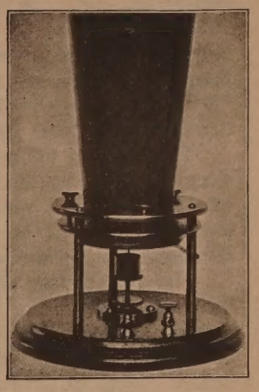
THE NEWSPAPER FOR
THE HOBBYIST OF VINTAGE
ELECTRONICS AND SOUND

THE HORN SPEAKER

TELEPHONE CENTENNIAL
1876 - 1976



Building the Roberts Circuit

By ANDREAS MacGILLICUDDY

The combination of regeneration and radio frequency amplification in the receiver described in this article is an excellent one. We can heartily recommend this set to all radio fans.

THE Roberts receiver is simple in design; one does not have to be mechanically inclined to construct it properly. All the research work has been done and the proper assembly carefully worked out for the builder by ten of the leading engineers of the country, who collaborated in the creation of an efficient five-tube receiver of unusual sensitivity, selectivity and volume.

The theory of this receiver is comparatively simple. It consists in the addition of a neutralized stage of tuned radio frequency amplification to a regenerative detector. Beyond the detector is an audio frequency amplifier such that all tones between 100 and 3,000 cycles are amplified alike, and those above 3,000 cycles are given a slight "boost" to compensate for the characteristics of the average horn.

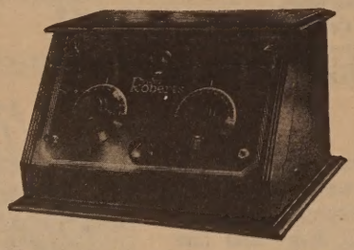
Tuning has been reduced to the simplicity of just two major controls. A sensitivity and a volume control are provided, in addition to the two major controls, to make the receiver so flexible in tuning as to meet every possible condition. All tubes but the radio frequency tube are controlled by separate amperites, which automatically adjust the tubes to their correct operating voltages. The radio frequency stage is controlled by a 25-ohm rheostat which serves as an efficient volume control.

LAYING OUT THE PARTS

It will be well for the builder to observe closely the system employed here in assembling and wiring this receiver. Usually it is the custom first to assemble all the units in their places, and then do all the wiring. Here the assembly is done jointly, with partial wiring. This tends towards ease of building, because the hand is not hindered by the presence of parts not yet necessary to the completion of the receiver. This also insures against mistakes on the part of the constructor.

It must be kept in mind that the tubes in this receiver are not laid out as in the conventional set. For simplicity in wiring, the first audio frequency tube is made the first, the radio frequency the second, the detector next, and the two audio tubes hooked in parallel are the fourth and fifth tubes.

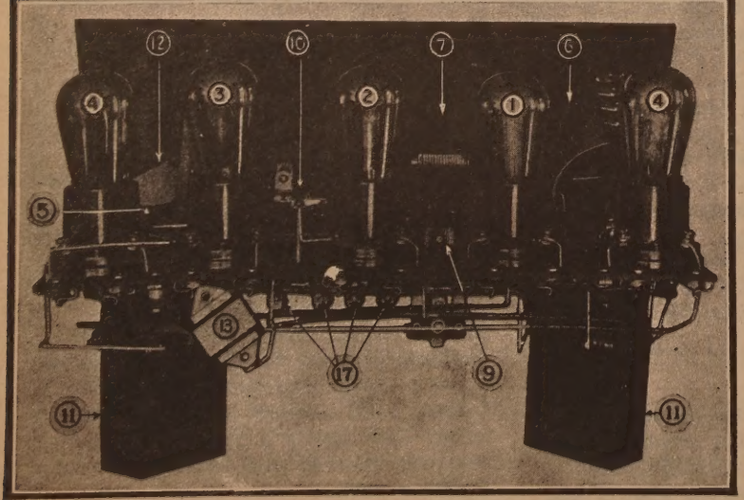
The antenna coupling coil consists of 50 turns of No. 24 D.S.C. wire wound on a three-inch form for the secondary and 15 turns of No. 26 D.S.C. wire on a 2¾-inch form for the primary. For the R.F. transformer; the primary has 25 turns on 2¾-inch diameter; the secondary 50 turns on 2-inch diameter, and the tickler coil has 30 turns on 1½-inch diameter. The primary and tickler coils are wound with No. 26, and the secondary with No. 24 D.S.C. wire. The illustration at the top of the next page depicts this last-described coil.



The panel view of the receiver that employs the Roberts circuit.
Photos courtesy of Hammarlund-Roberts.

BATTERIES AND TUBES

For the operation of the receiver two "C" batteries of 4.5 volts each are required, two or three 45-volt "B" batteries and a 6-volt storage battery for the five UV-201A tubes; or dry cells if UV-199 tubes are used. If tubes other than storage battery tubes are used, both "C" and "B" battery values should be changed to correspond with the directions supplied with the tubes.



The numbers in this illustration correspond with those at the bottom of the next page. By the use of a sub-panel a great amount of apparatus can be placed behind a relatively small front panel and yet there is no unnecessary crowding.

IT is against the policy of RADIO NEWS to publish the names of manufacturers or of makes of instruments in connection with the apparatus described in these pages, but this information will be gladly given privately. If you are interested in any special instruments described here, address a letter to the I WANT TO KNOW DEPARTMENT, enclosing stamped return envelope. The names and addresses of the manufacturers will be given free of charge. —EDITOR.

If it is desired to use the new 112 or 120 type of tube in the last audio stage, only one tube need be used instead of two. The amperite cartridges, though, will have to be changed for cartridges designed for the type of tube used.

Regulation of the "C" battery voltages is essential to correct operation of the radio and audio frequency stages of amplification; and it may be well to try different values of such voltages. The builder will readily observe the point at which most satisfactory operation is obtained.

The use of "C" batteries also reduces greatly the drain on "B" battery current, compared with that when no "C" batteries are used. This is quite important as it directly affects the length of life of the "B" batteries.

OPERATION

Assuming that the antenna, ground and loud speaker are connected to the set, turn the volume control on full and advance the sensitivity dial to its maximum position. Both knobs should be turned to the right to increase, and to the left to decrease. Now, on simultaneously rotating the two tuning dials at approximately the same settings, a squeal should be heard in the loud speaker, provided any stations are "on the air." Adjust the dials for maximum squeal and then reduce the setting of the sensitivity dial. This will eliminate the squeal and result in reception of music, or whatever is being broadcast at the time.

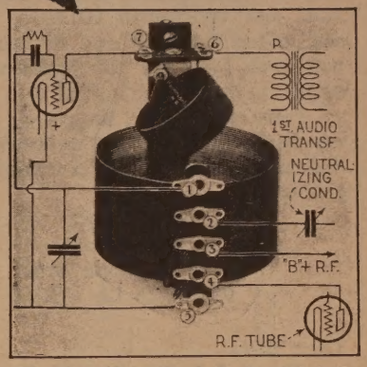
Perhaps on local stations the advancement of the volume control to its limit will produce distorted reception, because of tubes overloading. If this is the case, it is only necessary to reduce the setting of the volume control, or else reduce the amount of "B" battery voltage applied to the last audio amplifier tubes.

Regeneration should be obtained smoothly by advancing the sensitivity control; that is, the tube should go in and out of oscillation quite evenly and slowly. If this is not the case reduce the detector B voltage applied to the B + 45 jack.

The two major tuning dials should read very nearly or sometimes exactly alike, and it is possible to calibrate them so that at a glance it will be possible to know where to turn to find unlogged stations, if their frequency or wave-length be known.

To calibrate the dials it is only necessary to note the position of the dials when four or five, or as many as possible, stations have been successfully tuned in. By plotting the readings on cross-section paper a curve is obtained, which will show at a glance the setting of the dial for any particular frequency or wave-length at which a station may be broadcasting.

The volume control is a filament rheostat in the radio frequency amplifier tube. To prolong the life of the tube this should never



The above illustration shows the method of mounting the tickler coil and the various connections. The numbers indicate connections to parts shown in the diagram below.

be turned up any higher than necessary. It is impossible to harm the filament of this tube by turning the tube to full brilliancy, because of a safety fixed resistance of 4 ohms' resistance, which is placed in series with the rheostat.

The antenna taps on the first coil are for adjusting the receiver to the particular antenna used with the receiver. When the correct tap is found, the tuning of the two condensers will be practically alike; and to tune in one station after the other it is only necessary to rotate both condensers at the same time. It will not be necessary to have the detector oscillate to pick up stations, if the receiver is operated within two hundred miles of any moderately-powerful station.

Using the greater part of the antenna coil increases the signal strength to some extent but broadens the tuning, with a long antenna. The other taps increase the selectivity on the high frequency (low wave-lengths); and on the low frequency (high wave-length) stations it will also lower the volume to some extent. If it is so desired, connection to these taps may be by means of a small clip, allowing any tap to be selected at will, according to the type of reception desired.

The quality of the tone of the receiver depends greatly upon the intelligent use of "B" and "C" batteries. Tubes also play an important part. It should be a matter of practice to change around the tubes in their sockets, to obtain maximum efficiency from each of the tubes by operating it at the place in the circuit at which it proves to be most efficient.

Experiments should be made with grid leaks of different values in order to attain maximum efficiency and sensitivity. All grid leaks and grid condensers vary a trifle from their rated values, but it will be found that some particular value of grid leak will give perfect results, depending upon the tube used, the value of the grid condenser, etc., etc.

NEUTRALIZING THE RECEIVER

After the receiver has been entirely wired, and the constructor is satisfied that no trouble exists it is time to proceed with the neutralization of the set. If the set is not properly neutralized, the squeals which are heard in tuning are radiated from the antenna, and cause very objectionable noises

(Continued on page 3.)

LETTERS

EDITOR'S MAILBAG

Dear Jim:

Just got a nice letter from O. H. McDonald, Jr. He offered me a Blue Tube and talked of building up interest in your area. It sounds like there are some dedicated people "down your way." This whole antique craze needs more people like O.H.

I'm trying to get people in this area to respond and not having a lot of luck yet. I won't discourage easily. I'll keep plugging away. Perhaps the interest will develop.

I'm restoring the few sets I have as I want to see them perform. I just reworked a 2 tube reflex set built around 1920-22. It was a well built "home constructed" set with xtal and two tubes (01As). One tube amplified both RF and AF surprising how much gain in two tubes with an amplification factor of 4.

Your newspaper is great. I've recommended it to my readers in the 2nd issue. Will hit it again if you want me to.

Sincerely,
Floyd A. Paul
1545 Raymond Ave.
Glendale CA 91201

Dear Sir:

Since I last renewed my subscription to The Horn Speaker I have for some reason been receiving it at the end of the month rather than the beginning. Last month issue I.E. for March, I received the last week in March rather than the beginning of the month. I was wondering if this is the way it will be in the future or there has been a mix up. To date I have not yet received my April issue. The trouble with getting the issues late is that when I contact collectors in the buy and sell section most of the items are already sold.

If possible I would like to get your publication as early as possible.

Sincerely,
B. Katz
8520 Fernald
Morton Grove, Ill. 60053

Editor: We mail during the first week of the month.

Dear Jim:

Here's my renewal check for your excellent publication and a 25 word classified ad.

I look forward to The Horn Speaker "mail call" with almost childish enthusiasm (my wife and 2 children tease me about "any radio mail" and when the publication has arrived and they beat me to the mail box, they really enjoy "holding out" on me if The Horn Speaker is here).

Seriously, two of the best features of your publication are the cover photos (any chance of having the mailing stickers placed at the top) which can be framed for display and the other excellent photo reproductions of ads from the 20's and 30's and historical radio events, etc. Most of the photo repro's are good enough to frame (even though this would "butcher up" the copies .....contents-wise.

Keep up the good work--The Horn Speaker is invaluable to me as a collector.

Sincerely,
Wallace Geary
209 W. Saunders
Mt. Pleasant, Iowa 52641

Editor...The Post Office requires that the address labels be placed at the bottom on the left upside down. Thank you.

Dear Jim:

Under the column of "Letters," perhaps you could put a little something in there, to the effect that I would like to meet the other subscriber that also lives here in Tomah. I have seen a letter in the magazine at one time, and all I can remember is that there is some-one here in Tomah that also takes THE HORN SPEAKER. You may list my phone number for him to call, it is as follows: 372-3896.

Thank you for your consideration and a fine magazine, keep up the good work.

Sincerely,
John G. Carlson
1222 Kilbourn Ave.
Tomah, Wisconsin 54660

Dear Jim:

Thank you for your reminder that my subscription has expired. I enjoy reading your newspaper, especially the "Editor's Mail Bag" and the various comments made by your readers.

In the March 1976 issue, I enjoyed reading the comments written by my friend LaVerne Lastz and his home spun philosophy on using early radio tube types in his various 6 volt battery receivers. His need for a 6 volt inverter (6 volts in - 180v DC out) can be met by adapting one of several circuits found in the various Solid State Handbooks, one of which is the Motorola Power Transistor Handbook. A letter to their Application Department will usually result in full details.

I am by nature an old collector of early radio tubes, both receiving & transmitting. I have a few early battery radios, which I have restored & display as "conversation pieces."

Sincerely,
Leo L. Gibbs W8BHT
701 Brookfield Road
Kettering, Ohio 45429

Editor...Thank you.

Dear Jim:

Enclosed please find my check in the amount of $8.00 for another years subscription and a classified ad. I started collecting radios when I was still in High School, several years back, my first radio being a Brunswick table model, which for some reason or another I still haven't finished restoring. It sure has been a pleasure reading The Horn Speaker the past year for you see I didn't know that there were other people interested in collecting early radios until recently. I am now a member of the AWA and it was through members that I became aware of your newspaper.

My first battery set a Grebe MU-1 was lucky enough to take 3rd place in the National Conference of the AWA Old Equipment Contest last year. Since then I have acquired an Atwater Kent Model 10 and a crystal set manufactured by the William E. Cheever Co. of Providence R.I. which puzzles me because I cannot find any information on it. Perhaps you or one of your readers may help me. It is 3" by 5" with a coil mounted on it, on which a slider moves across it, and the name Wecco Gem on the face of it. I wonder when it was made and any other information on the kind of whisker or wire which is attached to the little bar that is used to feel the crystal mounted in a brass mounting cup because it looks like a modified pen spring or is that the way they were?

Sincerely,
Raymond Sieracki
48 Hamilton Street
Lackawanna, New York 14218

Editor...Who can help about the crystal set?

TURN BACK THE DIAL

December 1, 1935
by Fred L. Davis

During his first 200 radio broadcasts, Jack Benny has told 2,483 jokes. He has had 66 satirical dramatizations of plays and films of which "Grand Hotel" was the most successful, having been repeated twice. 36 poems were recited by Mary Livingstone, with "Labor Day, Oh, Labor Day" making the biggest hit. Mary also was responsible for two national catch phrases---"O.K.. Toots," and "What's she got that I haven't got?" 744 musical selections have been aired on the Benny Program exclusive of 17 attempts to play "Love In Bloom".....Benny bandmasters have been George Olsen, Ted Weems, Frank Black, Don Bestor, Jimmy Grier, and Johnny Green. His singers have been Ethel Shutts, Andrea Marsh, Jimmy Melton, Frank Parker, Michael Bartlett, and Kenny Baker. Mary Livingstone has sung 7 times. 123 letters were received after Jack Benny's first broadcast and now the letters average around 2,000 a week.

Keep in mind the above statistics were as of December 1, 1935.

Roberts
(Continued from page 1)

in all neighboring receivers which at the time happen to be operating on the same wavelength.

Tune in some moderately strong station, and, listening in with head phones or loud speaker, turn out the radio frequency amplifier tube by turning the volume control to the extreme left. Adjust the midget condenser setting until signals either disappear entirely or are at a decided minimum. It will be necessary to retune slightly after this adjustment; and then the tube should again be turned out and the midget condenser readjusted slightly to a more exact position. It will be found that there is a distinct minimum of sound when the neutralizing condenser has been correctly set.

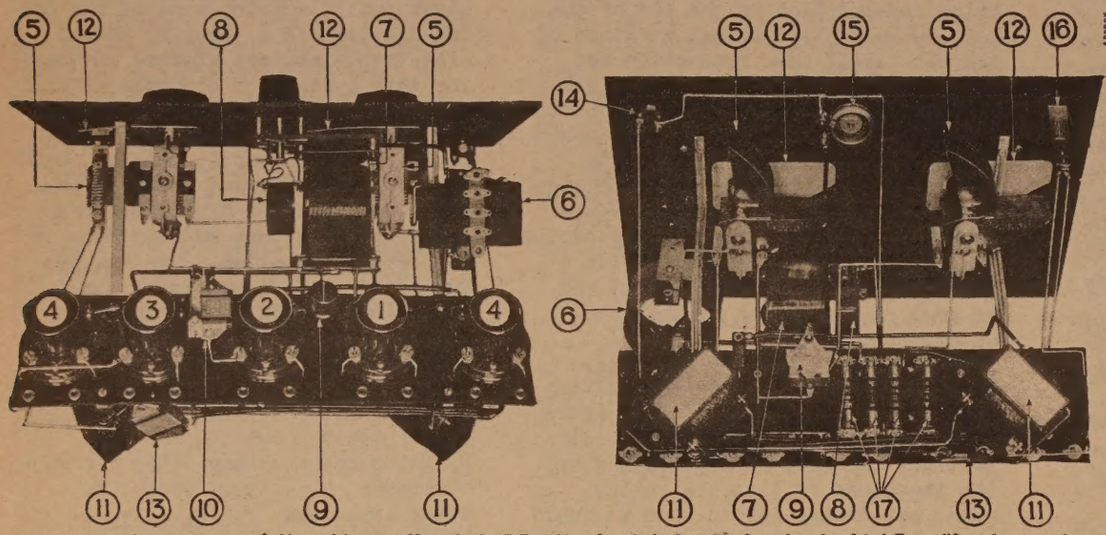
After neutralization has been accomplished you may feel perfectly confident that you can in no way annoy your neighbors by radiating distracting squeals.

If the amplifier cannot be neutralized, it indicates unwanted coupling between the grid and plate of the first tube. Wires running near one of the coils should not be run near the other coil or coil wiring; since coupling may result which will make it impossible to neutralize the receiver.

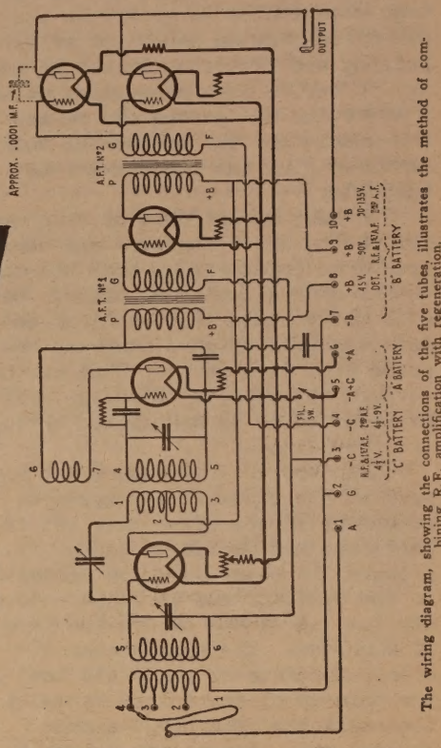
LIST OF PARTS

2 low-ratio A.F. transformers,
2 .0005-μf. S.L.F. condensers,
1 "midget" variable condenser, 5-plate, 16-$\mu\mu$f.,
1 set Roberts coils,
2 4-inch dials,
5 vacuum tube sockets,
1 1¾-inch dial,
1 25-ohm rheostat,
1 single-circuit jack,
1 battery switch,
1 metallized resistor,
4 amperites, No. 1-A,
1 .00025-μf. grid condenser,
1 .002-μf. fixed condenser,
1 .006-μf. fixed condenser,
5 prs. phone-tip jacks,
1 Roberts foundation unit, as supplied by manufacturer.

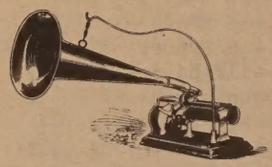
(Continued on page 1593)



Above are shown two views of this receiving set. No. 1 is the R.F. tube socket; 2, the detector tube socket; 3 and 4, A.F. amplifier tubes, two of which are in parallel; 5, variable condensers .0005-mf.; 6, antenna coupler; 7, R.F. transformer; 8, tickler coil; 9, neutralizing condenser; 10, grid leak and condenser; 11, A.F. transformers; 12, shielding; 13, by-pass condenser; 14, filament switch; 15, rheostat; 16, jack; 17, automatic filament adjusters. *Photos courtesy of Hammarlund-Roberts.*



The wiring diagram, showing the connections of the five tubes, illustrates the method of combining R.F. amplification with regeneration.



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OLD INFO

By Brent Dingman

Supplying wiring diagrams and schematic data to radio and or vintage electronics is an art in its own field just as important as repairing and restoring them. We will try to define in a historical sense their value so persons can relate and understand the monumental task involved plus the important role they play.

Two best known forms of diagrams for radios are schematics and perspectives (pictorial), both put together with a number of lines. We will not go into the technical detail analysis of each diagram, because this is a subject that can be covered separately. Diagrams will be referred to as schematics throughout the text.

Inventors usually experiment and make up the physical apparatus or component first, after they get it perfected and decide to patent it prepare the paper work and schematics. In the design field it happens today just as it did before the days of wireless. The next phases if more components or parts are used is the make-up of the entire assembly. Lets call the assembly a simple crystal set. A complete schematic is usually made up physically with an ohmmeter and pencil. Electrically we know it works and all the bugs are eliminated, but we still have a jungle or maze of wires on ten pieces of paper. This is placed in a neat logical order input to output. From the antenna through all the components to the headsets (output) we have the most common expression used in radio called a "radio diagram"...a complete schematic called a closed loop. Many times inventions were made up as a hobby physically and no paper work ever finished, therefore they were not submitted for patents. Once someone else discovered the working model it was just a matter of getting the paper work to the proper patent attorney and the invention was yours. In the infancy of radio, if there was ten similar circuits we know they let the courts make the decision who was right. From 1872 to 1924 there were about 2400 radio patents on every conceivable subject. Who owns these patents were decided upon by the schematics that were published many times in the various radio publications by the day, month, and year.

How many times have you ordered a schematic from someone or researched it out yourself and could not make heads or tails of it? The problems are multiplied many times over when you apply this approach to the very early radios of the 1920's such as non-regenerative, regenerative, super-regeneratives, the neutrodynes, etc., especially the unknown radios without any tubes, numbers, nomenclature, those kit radios made by anybody. Major manufacturers were afraid of other companies infringing on their rights and patents. Once a major manufacturer such as Westinghouse started manufacturing and selling their radio products, one example the Aeriola Jr. there was no law or requirements forcing them to supply a service schematic. The radio serviceman and customer were given the operating instructions on the lid of the set, but not the internal workings of the set...till mass production was under way in full force. We do not want to pick on Westinghouse, but in a free enterprising system many other small companies would pop up with what they thought was a better design (some would not even work), we even have that happening today....re-designing around their circuits..adding a new dial or feature, promote it and be gone in six months or till the courts intercepted.

From 1900 to 1920 we saw every large newspaper get into competition with the radio industry. Soon every small newspaper had their own radio section, circuits were published by the thousands so that the public could get enough information to build themselves a radio. This started the boom which the large manufacturers could not control. Many radio amateurs were the proving grounds for the larger firms. They would get their station operating and submit the information for publications to the newspapers, from the newspapers many of our large radio magazines were born. The major companies through trial and error of the public and radio amateurs gathered all the ideas and schematics up. Many were incorporated, many not used so the radio amateurs formed their own American Radio Relay League. Their magazine QST published their schematics instead of being discarded and the rest is history.

The major companies such as RCA started distributing their license circuit schematics to other manufacturers and especially the major parts manufacturers such as General Radio sold their parts to smaller companies which started making kit radios. One such company started in 1923 by Charles R. Leutz called the Experimenters Information Service, Inc., he sold GR parts and developed the large fine blueprints of his kit radios. If many readers really want an inside projection of why and how these large classic-kit radios were developed, sold to the public using his system of developing each stage of the different types of radio circuits, associated schematics from other sources (not found in any other publications) get his 1925 book titled Modern Radio Reception.

It is our favorite book because it proves how schematics and magazines (with a law suit from Westinghouse and Radio Corporation of America) documented the proof Leutz was recommending and selling his Model "L" and Model "C" Super-Heterodynes before RCA's "Radiola Grand." In January 1923 issue of Radio News Leutz advertised on page 1393 the Model "L" S/H and the blueprint designs; again in 1923 July issue of Radio News he carried the first advertised famous Model "C" S/H blueprint designs illustrating all details. In March 1924 issue of Radio News RCA made the first public announcement of the coming Radiola S/H's, over 14 months after Experimenters started advocating this system and 8 months of the introduction of the Model "C".

There are many smaller kit companies too numerous to mention, but they all had the same thing in common...sell you the blueprints and parts to build that radio. Many of the larger companies, once the product sold would issue you a construction book on everything you needed to build their radio. Many books covered up to 10 different models such as 1927 Radio Key book covering not only all the All-American Products, but the Roberts, Browning-Drake or any other kit manufacturer using their products. Other books are: F.A.D. Andrea, Inc. 1923 Hazeltine's Circuits Neutrodynes, Cockadays 23-lessons in Radio, Popular Radio's Handbook No. 1 1923, ERLA booklets and pamphlets. Please keep in mind some companies just sold the schematics, some were distributors for just the "parts only" and told the reader to look in some issue of a newspaper or magazine for the circuit-type. There were radio "fax" booklets and 1920-25 circular file-type 3 x 5 cards covering different models.

We can see there are many many publications available, but in the radio amateur wireless field....if one wanted to learn more about the subject two of the best books were written on Marconi's theory and stations by Elmer Bucher, 1917 Practical Wireless Telegraphy book. This explains the theory to the general public plus it was used world wide as a complete text for students of radio communications. In 1917 only 10,000 were printed and in 1918 40,000. Well illustrated with over 350 items that cover 17 sections...facts taken from the Marconi Company plus himself. In 1920 Elmer wrote the sister book called The Wireless Experimenter's Manual. The student well versed in the 1917 book of theory could apply this knowledge by building Marconi's earliest equipment, which included a step-by-step detail analysis on "how to" construct a crystal detector to an amateur and a complete broadcast station. The book contains over 350 illustrations of commercial Marconi equipment not found anywhere else unless you are lucky enough to have his original drawings and blueprints.

Both books are scarce.

We can not forget this 1900 to 1925 period, because some of the only schematic data on equipment you can find is found in the following booklets, sales brochures and major old catalogs: The 1920 Young and McCombs Catalog illustrates the very early radio apparatus of merit, Audions, De Forest 15 Unit panel receiver, 10-panel, RS-100, series P-100, 200, 300, T-200 audion, De Forest A.C. type O transmitter, OT-10, spark gaps; 1921 F.D. Pitts Catalog, Grebe 2-step RORB, Clapp-Eastham, Grebe's RKAB, CR-1, 2, 4, 6, 7 omnigraphs, and all the parts, prices etc. Some of the best large catalogs on early wireless are the Wm. B. Duck books series and E. I. Company Catalogs. These catalogs cover wireless items from A to Z.

Each manufacture designed their service data and schematics for their own use, not caring very much if the radio service man or customer got help. They all used different parts, then assigned part numbers. UX201-A tube used throughout industry was the same, but some companies such as AK (Atwater Kent) would assign part numbers such as AK403 and not UX2, 3, 401A etc., schematically illustrated as V1, V2, V3, etc., in otherwords it was not till 1933 that all parts such as tubes were standardized by the RMA (Radio Manufacturers Association). In 1939, it was decided that all schematic symbols used by the RMA would be standardized. Lets use the Atwater Kent Manufacturing company as an example: They made almost all their own parts, even the squeal... in those days before standardization there were proprietary rights between each company, they were so afraid someone would use their ideas and make a bundle, plus the fact of being in competition with each other they would try to re-design around each others circuits, patents and licenses. Have you ever been confused by the way the AK schematics were presented? They had their own codes, tubes were not labeled, color of resistors with values, all with minimum voltages and troubleshooting methods. This was the presentation and information given to other publishers only.

The Atwater Kent Original Factory Service Manuals kept at the plant explain in detail how to repair, use their codes, and analysis the data on every part and radio made. These were only given (proprietary rights) to large authorized AK dealers and distributors. Smaller dealers and customers who purchased their equipment were given the following: Operators manuals, catalogs, instruction booklets and sales brochures plus the needed advertising material such as signs etc. No repair knowledge was required by the customer, therefore all are very non-technical.

Large publication companies such as J. F. Rider, Supreme Publications, Audels, Gernsback and even smaller ones entered the market in or about 1925. We will just mention the ones most readers are familar with. All had the same idea of providing a better system of presenting schematics and service data. Now that the radio manufacturers were busy making millions of sets it was better to contract it out. To promote a new radio a manufacturer had to see how well the new product was going to move so they tested it by advertising in some type of major radio publications, remember these publications were on the market as early as 1908 and I will explain later.....the editor would be supplied with the literature and sometimes a set. Many times the schematics and data, photos were redrawn and presented in a better format. A major company either did not appreciate the reviews or maybe the editor was told not to publish the information, but after reviewing early radio magazines I could never understand why "major blue-chip radios" were advertised in the magazine but the schematics and detailed parts were never reviewed by them, but each radio magazine such as Radio Broadcast had a radio in kit form you could

MAGAZINES, CATALOGS, AND PAMPHLETS

M50 ALLIED's RADIO BUILDER'S HANDBOOK, 1951, 32 pages $4.00
M51 AMATEUR RADIO How and why of wireless w/ complete instructions on operation of receiving outfits. Maurice J. Grainger, 1932, a special edition prepared for S.S. KRESGE Co., paper backs, excellent condition, well illus., 5 x 7" $15.00
M52 THE DAILY TIMES RADIO BOOK, by Carlt-ne Butler, 1923, 5 x 7-1/2", Radio Receivers and how to build them, paper cover, excellent $15.00
M53 THE NEUTRODYNE, ALL ABOUT IT...by Maurice L. Muhleman of the staff of Radio News, 1924, 48 pages plus ads, well illustrated, paper backs, excellent $15.00
M54 Kresge's RADIO CATALOG and BUYER'S GUIDE. 1925-26 issue, by Merle Duston, paper backs, excellent condition $15.00
M55 PRINCIPLES OF RADIO COMMUNICATION, ICS Staff, 1944, paper, excellent $4.00
M56 CODE PRACTICE AND OPERATING PROCEDURE, ICS, Paul Chamberlain, 1942 $4.00
M57 CYCLOPEDIA OF TELEVISION FACTS, by M. N. Beitman, Supreme Publications, 1939, illustrated and pictures, really nice book $10.00
M58 FORMS SUGGESTED FOR TELEGRAPH MESSAGES ISSUED FOR THE CONVENIENCE OF PATRONS of THE WESTERN UNION TELEGRAPH CO. $4.00
M59 WIRELESS HOOK-UPS, selected and arranged by C. E. Rudolph, 1913, 165 different hook-ups, 171 illustrations, 5 x 7", 96p., paper back, good plus $10.00
M60 R/9, December, 1933, not like new, but in excellent condition $4.50
M61 THE TRANSMITTER, America's Amateur Radio Magazine, Vol. I, Sept., 1926, No. L, printed in Tulsa, Okla., one page has been clipped, so... $5.00
M62 HOW TO BECOME A RADIO AMATEUR, published by ARRL, 8½ x 11", excellent $12.50
M63 RADIO SETS AND SUPPLIES, R. M. Laird Electric Co., Minneapolis, Minn. Catalog for 1924-25. An excellent book w/ terrific illustrations of parts, radios, etc., in mailing envelope w/ two 2¢ stamps $12.00
M64 THE MAKE-EM-BETTER sheet, large fold-out. Published by Samson Electric Co., Canton, Mass. 17 schematics of receivers like the Hammarlund, Roberts HiQ showing the use of Samson AFX RF chokes. No date but 201 and 199s used in receivers... $4.50
M65 CUNNINGHAM RADIO TUBE REFERENCE BOOK, 1933, 3 x 6", good plus condition $3.50
M66 WHAT EVERYONE WHO OWNS A RADIO SHOULD KNOW ABOUT STORAGE BATTERIES, Prest-O-Lite, 1925, small paper booklet, 3½ x 6¼", pictures and illustrations $3.50
M67 CONSTANT CURRENT TRANSFORMERS for Mazda Street Lighting Systems, 1915 $3.50
M68 FRENCH Radio Manual & Broadcasting Station Directory, by Mr. Ray-O-Lite Guaranteed Batteries, small booklet, 1925, good plus condition $3.50
M69 SERVICE HINTS, Vol 3 compiled by Sylvania Electric Products, Inc., 1943 small booklet, good plus condition $4.00. RADIO CIRCUIT HINTS and RADIO TUBE HINKS, $4.00 each, or all three for $9.50
M70 THROUGH ELECTRICAL EYES, Bell Telephone Labs, 1928, Physics and Chemistry involved in television, paperback $5.00
M71 RADIO COMMUNICATION LAWS OF THE UNITED STATES, 1919, paperback, good $4.00
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M75 The General Radio EXPERIMENTER, Vol X, No 3, 1935, $2.00, Vol IX, No. 9, $2.00, or both for $3.50
M76 LAFAYETTE RADIO ELECTRONICS, Catalog #620, 339 pages $5.00
M77 BURSTEIN-APPLEBEE CO., Radio TV Electronics Catalog #641, 1964 $5.00
M78 RADIO NEWS, Gernsback Pres., Experimenter Publishing Co., Inc., Vol. 6, No. 4, October 1924, very slight cover and spine wear $6.00
M79 RADIO NEWS, Mackinnon, Pres., Vol 12, No 1, July 1930, very slight spine and cover wear $5.00
M80 RADIO NEWS, Vol 12, No 2, August 1930, very little wear $5.00
M81 RADIO NEWS, Ziff-Davis pub., August 1947, slight wear $4.50
M82 POCKET RADIO GUIDE, Gernsback Publications, 1936 RadioCraft #14 $5.50
M83 THE SUPERHETERODYNE BOOK, Gernsback Pub., RadioCraft #3, 1934 $5.50
M84 BRINGING ELECTRIC SETS UP TO DATE and Modernizing Radio Receivers, Radiocraft Library No. 6 $5.50
M85 HOW TO BUILD RADIO RECEIVERS, RadioCraft No. 38, 1951 $4.50
M86 RADIO WORLD, October 1935, Excellent $4.50
M87 RADIO ELECTRONICS, September, 1954, Hugo Gernsback Editor $4.00
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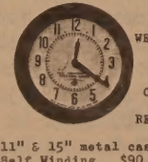
M96 PHILCO RADIO MANUAL, practical radio service methods and procedures for receivers and transmitters, 8½ x 11", 1944, illustrated, soft cover $5.00
M97 MALLORY Radio Service Encyclopedia, replacement recommendations for all radio receivers, April 1948 $4.50
M98 SHORT WAVE GUIDE, 4 pages missing, covers good $5.00
M99 MID-WEST Radio Mart Catalog, 1937, Chicago, "Short Wave, Amateur and Communication Equipment" $5.00
M100 EDMUND Catalog, Edmund Scientific Co., 1962 $2.00
M101 WALTER ASHE Catalog Supplement No. 552, early 50s $1.00
M102 RCA packet of various sheets including copy of HAM TIPS, several of RADIO SERVICE NEWS, and several on tubes...dates late 40s and 50s pack for $2.00
M103 SYLVANIA package including 10 page brochure and specs on "TRANSMITTING TUBES"1948; "SYLVANIA AIDS TO WAR-TIME SERVICING," 1945, 20 pages; both copies with an extra thrown in $3.00
M104 GENERAL RADIO CO., Bulletin 932, Sept. 1930, apparatus, parts accs. $4.00
M105 SAMS PHOTOFACT and Technical Digest, July-August 1952 $2.50
M106 NATIONAL COMPANY, INC., line brochures, etc. of NC-2-40D, HRO-7, NC-173, IF transformers, parts, type MB150 multi-band tank, dials and chokes all for $3.00
M107 E.F. JOHNSON CO., eight catalogs on parts, etc. $4.00
M108 RME 84 receiver brochure and Hammarlund parts catalog $1.50
M109 COLLINS RADIO Amateur Transmitter brochure, 1947, 310B, 310C-1, 310C-2, six pages; also 1946 B&W full line catalog, 20 pages including prices $3.00
M110 GENERAL ELECTRIC Packet of literature, 10 to 15 sheets, around 1950 $2.00
M111 G-E TUBE MANUAL, 192 pages, exc. condition, no date shown $3.50
M112 18 various sales brochures and/or catalogs from a number of manufacturers $3.50



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build from the magazine such as the 1927 RB "LAB" model.

When these articles were published in the early years of radio, I guess the only writers in which readers had faith were the chief engineers of the radio company that designed the set because I only see bylines like: Lawrence Cockaday, Kimball Stark, E. N. Rauland, just to mention a few. Were these men told to provide just enough technical data to get by with? Maybe the secretive information from the early days within major companies are carried over in today's industry.. only the Shadow knows! Many radio amateurs became writers in the later years and with more competition the schematics showed great improvement... more help to the radio serviceman.

Hugo Gernsback was the greatest radio publications pioneer. Gernsback was founder of Modern Electrics in 1908, Wireless Association of Americs in 1908, Electrical Experimenter in 1913, Radio News in 1919, Science and Invention in 1920, Radio Craft in 1930. Many other publications were spin-offs from these, plus others, perhaps, got their ideas from him. He realized there was a great need for improvement on schematics and service data for radio serviceman because readers were flooding him with mail. Starting in late 1929 and early 1930 through 1936, he published 6 volumes called Official Radio Service Manuals, in preparation of these manuals Gernsback would get his major sources of information from each radio manufacturer's original factory service manuals and lay it out in a better format. John F. Rider and M. N. Beitman's Supreme Publications entered the field on a large scale in 1930. They did the same thing except due to the large number of Radio Manufacturer's (about 2000 plus 12,000 models) they published just the schematic data on each model, if the circuit was the same on another model..it was referred to, leaving out alot of good service data.

Many models contain more information on the schematics than others, in many cases this is all that the manufacturer supplied, plus the fact schedules had to be met and it was a monumental task just to get the service data published. Also with all the factory service data supplied on one model it was not economically possible to provide all the data, due to the many changes and modification made, therefore these schematics were prepared for the very experienced serviceman and not the general radio collector. It was prepared to help do the job at that point in time and not be collected.

Today we have a publication firm that is still with us, Howard W. Sams or referred to as Sam's "Photo-Facts," established in about 1945, they still get their data from the factory service manual the same way only each folder has more models, illustrations, and data. As far as collectors are concerned it is only a good reference for electronics, 1940 through 1976, with very good information on early televisions, record players, general electronics if you are interested in this era. J. F. Riders and Supreme Publications also increased their data from then on, both in radio and television. Rider's last major large TV Volume was published in 1953, but our good friend Morris Beitman at Supreme Publications is still providing service information today. See chart.

Today the Supreme Series is available, so are all the J. F. Rider's radio and television volumes except the original Riders Volume No. 1. Rider's Volume No. 1-5 abridged can still be located, but due to the later revisions it lacks almost all the very very old radios found in the original volume No. 1. This volume covered about 1000 pages and 75% of the time it is impossible to get a complete set. If you are lucky it might take about two years doing a lot of trading to get a complete set. The Official Radio Service Manuals are next to impossible to find, these as far as general servicing is considered are the best source to use. Many persons, who have a set of J. F. Riders volumes, especially the abridged 1-5 or No. 1, feel they can provide you with all the data on any old radio set ever built. This is

Most radio collectors, beginners and experts are oriented to these publications. We have established this guide as an aid in determining the approximate volumes, exact page count, years the equipment was made. The years are very important, if you have the Riders Series "MASTER INDEX" and can find the volume and page, the year can now be determined, with no index, simple use this chart. Somehow all indexes left the year off.

**The Radio Perpetual Trouble-shooting manuals provides almost all FM/AM receivers, record changers, tuners, and recorders from 1930 to 1953. Original volume no. one contains 40% 1926-1930 models.

JOHN F. RIDER PUBLICATIONS CHART

RADIO MANUALS			TELEVISION MANUALS		
VOLUME	PAGES	YEARS	VOLUME	PAGES	YEARS
1	1000	1926-1931	1	2000	All-to 1948
2	950	1931-1932	2	1896	1948-1949
3	1100	1932-1933	3	2032	1949
4	1240	1933-1934	4	2296	1949-1950
5	1050	1934-1935	5	2320	1950
1-5*	2000	1930-1935	6	2320	1950-1951
6	1240	1934-1935	7	2352	1950-1951
7	1600	1935-1936	8	2688	1951
8	1650	1936-1937	9	2136	1951-1952
9	1672	1937-1938	10	2350	1952
10	1664	1938-1939	11	2200	1952-1953
11	1652	1939-1940	12	2200	1953
12	1648	1940-1941	13	950	1953-1954
13	1672	1941-1942	14	850	1954
14	1376	April-42	15	850	1954-1955
15	2181	1942-1946	16	750	1955
16	768	1946-1947	17	750	1955-1956
17	1648	1947-1948	18	550	1956-1957
18	2036	1948			
19	2100	1948-1949			
20	1776	1949-1950			
21	1648	1950-1951			
22	1520	1950-1951			
23	1152	1952-1953			

* ABRIDGED REPLACES Vol.1—5

The television manuals provides factory-authorized service data on TV receivers, boosters, and kits. Covers most early models such as the pilot series. Volume no. 1 is the only one 8½ x 11, the rest are very large 12½" x 15½", these manuals were advertised in 1963: volume 1 $19.40, volume 2 through 18 $23.52.

The radio volumes: abridged 1-5, 7-14, 17 sold for $19.40: vol. 16 $9.70, 15, 18, 19, $22.05, volumes 20 & 21 $20.58, vol. 22 $17.64, vol. 23 $14.70.

**All original radio manuals first editions were three-hole punched, if you get the later editions, they were all bound.

The original radio manual volume no. 1 contains an excellent master index in front, includes many older radios: Each volume then had their own seperate master index, to finally an overall master for 23 volumes, radio and TV.

not true, you have to have a good library of all books which pertain to schematics or the original factory service manuals.

When researching out the very old radio sets from the 1920-25 era, 75% can not be found in Riders, Supreme or the Official Radio Service Manuals. If you can not locate the schematic for a kit or unknown radio, you have to be a very good technician or design engineer. Look over the circuit, number of tubes, types, dials, study each stage of the radio and then use an identical circuit from another radio. If you want to tackle the research job yourself, plan to spend about two to three hours. Try the public libraries, word of caution... many very large public libraries now micro-film all the old books and literature, newspapers, etc., it started about 15 years ago, if the books were available. All libraries hold annual auctions to update their library (can not have old looking books in a new modern building) stock and use these funds for operations, so be on the lookout. Small community public libraries who are not on the micro-film system are a very good source for both old book and other literature. If you can not locate the service information, try someone who provides these services, the fees are quite reasonable and well worth it, plus you will be able to repair the set, the value will increase because it will be working.

We are aware of the many major texts books available on trouble-shooting, service data general notes, large amount of theory, very technical type literature and the major manufacturer of component guide books such as P. R. Mallory parts encyclopedias. Here is how we rank the best sources for schematics and service information for radios from the years 1900 to 1950.

1. Any radio either known, unknown, original or kit form 1900-1925 original factory service manual, or if in kit form the how to construction book; if unknown a similar identical circuit. Many circuits are re-design by collectors.
2. Old newspaper sections for blue-chip major radios 1900-1925.
3. Original factory service manuals for radios 1925-1950.
4. All the old radio magazines for radios 1925-1950.. Layouts and reviews.
5. Official Radio Service Publications Manuals for radios 1926-1936.
6. John F. Riders Radio Trouble-shooters Volumes 1-23 1930-1950.
7. John F. Riders Televisions Volumes 1-12, 1948-1953.
8. Supreme Publications Radio and Televisions Volumes 1-R27 1926-1969.
9. Howard W. Sams Sams-Photo-Facts late radios and televisions 1947-50.

NOTE: Sometimes you have to use all sources. Auto radios are included, but the large firms also have seperate books on these and later models.

We hope this will help and enable you to find all the schematics, clear any mis-leading source information. This documentation is a result of designing, making point-to point schematics, researching, appraising, providing services to collectors and years or experience in vintage electronics and space-age communications.

Club News

BUCKEYE ANTIQUE RADIO AND PHONOGRAPH COLLECTORS' CLUB

The Buckeye Club is planning a Show and Sale at Chapel Hill Mall on November 19, 20, 21. More details should be obtained by writing the Secretary, who is Ken Longenecker, 1937 Stoney Hill Drive, Hudson, Ohio 44236.

Many thanks to Barb Spriggel for giving the above information.

SOUTHWEST VINTAGE RADIO AND PHONOGRAPH SOCIETY

The coming convention, November 5, 6 and 7 at Ramade Inn East in Dallas, Texas will be the biggest event or combination of events that has ever happened to us. We will have an auction which is something we have experienced with remarkable enthusiasm. A contest will take place so that collectors can be rewarded in public for their hard work or luck in discovering valuable sets and sometimes restoring them. We are even planning "how to do it" clinics to help members restore their oldies. We'd like to have as many display booths as possible to demonstrate the scope and possibilities of our hobby. The program includes a speaker to give an interesting talk about the history of radios and/or phonographs.

Send for details by writing a card or letter to Southwest Vintage Radio and Phonograph Society, P.O. Box 19406, Dallas, Texas 75219.

FINDS OF THE MONTH

I ran across something in an antique store last month that might be a find of the month (at least it was mine!). The store had a couple of boxes of "old radio/electronics parts" for sale for $12.50. I nosed through them in the dark enough to determine that the contents were worth the price but didn't fully investigate until I got the boxes into the light of day after I bought them. They turned out to have one complete Emerson AM/Police radio from the mid-30s, a substantially complete Stewart Warner 300, the chassis of an unknown late 20's set with a fine dynamic speaker, and a few Silver Marshall miscellaneous parts, replacement audio transformer for a Radiola III, and an Amperite ribbon microphone of early vintage. Now if I could just figure out what brand that chassis and speaker are.....

Ronald Kramer
134 Coolidge St.
Ashland OR 97520

I have what may be considered as the Find of the Month. Recently at a garage sale I purchased nearly two hundred old radio tubes for just six dollars, most of the tubes are of the 45, 27, 26, and 56 variety. However, some are quite rare and many are unused and still in cartons. This month I also bought a Philco Low-boy model 95 for $15.00, a Philco model 37-620 for only $5.00 and a Philco model 45 for $10.00. All are working and in mint condition. I also bought a National FB-7 short-wave receiver for $2.50.

I enjoy your publication very much. But would like to see it enlarged with more Zenith and Philco articles.

Henry C. Savich
381 E. Boston
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OC3	$3	2B7	$3	6AQ7	$6	6N7	$4	12A8	$5	25L6GT	$3	112A	$7	3878	$3
OD3	$3	2C26	$3	6AR6	$3	6N7G	$3	12AD6	$4	25W4	$3	117Z6	$4	5528	$3
OD3A	$3	2C34	$4	6AS4	$5	6P5	$3	12AE7	$4	2525	$3	124A	$4	5637	$3
[illegible]		2C51	$4	6AS6	$4	6Q7	$3	12AF6	$3	2526	$3	126	$4	5656	$3
OZ4	$5	2D21	$4	6AS7	$8	6R7	$4	12AH6	$2	26	$4	127	$3	5684	$3
1A1	$4	2E5	$4	6AS8	$8	6S4	$4	12AL5	$4	27	$3	171A	$6	5686	$3
1A3	$3	2E22	$3	6AT6	$2	6S8	$3	12AL8	$5	30	$8	WE-		5692	$3
1A4	$3	2E26	$3	6AU6	$3	6SA7	$3	12AT6	$4	31	$7	274A	$4	5725	$6
1A5	$3	2E30	$2	6AV5	$4	6SB7	$3	12AU6	$4	32	$4	281	$6	5749	$4
1A6	$3	[illegible]	[illegible]	6AV6	$3	6SC7	$3	12AV7	$3	32L7	$4	313	$5	5751	$6
1A7	$3	[illegible]	[illegible]	6AV8	$3	6SD7	$3	12AX7	$3	33	$4	326	$4	5763	$5
1B4	$3	2W3	$4	6AX3	$4	6SG7	$3	12AY7	$6	34	$4	WE-		5793	$4
1B5	$3	2X2	$2	6AX4	$5	6SH7	$3	12AZ7	$5	35/51	$4	328A	$4	5814A	$5
1B7	$2	3A2	$3	6AX5	$6	6SJ7	$7	12A	$7	35W4	$3	WE-		5849A	$4
1B8	$2	3A4	$3	6AX7	$2	6SK7	$8	12B7	$3	35Y4	$5	329A	$4	5874	$3
1C1	$4	3A5	$3	6B4	$5	6SL7	$7	12B8	$4	35Z5	$4	345	$5	5879	$4
1C5	$3	3AL5	$4	6B5	$5	6SN7	$5	12BA6	$3	35Z6	$4	381	$6	5881	$5
1C6	$3	3A8	$3	6B6	$5	6SQ7	$8	12BE6	$4	36	$3	412	$7	6080	$9
1C7	$5	3B4	$4	6B7	$5	6SR7	$8	12BH7	$4	37	$3	427	$3	6100	$6
1D5	$5	3B7	$4	6B8	$3	6SS7	$6	12BK5	$4	38	$3	445	$5	6136	$6
1D7	$5	3BN6	$7	6BA6	$4	6ST7	$6	12BL6	$4	38A3	$3	446	$4	6146	$9
1D8	$4	3BZ6	$5	6BA7	$4	6SV7	$3	12BY7	$4	39/44	$3	CK512-		6267/	
1D21	$5	3C6	$3	6BC5	$4	6T8	$2	12C5	$5	40	$40	AX	$7	EF86	$3
1E5	$5	3CB6	$4	6BC8	$7	6U5	$4	12C8	$3	41	$4	575A	$30	7025	$4
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1F4	$4	3D6	$3	6BD6	$3	6W4/EZ90	$4	12CT8	$7	EAF42	$6	715	$42	GC10/	
1F5	$5	3LF4	$5	6BE6	$5	6V6MET	$8	12CX6	$7	43	$4	717A	$10	4B	$10
1F7	$5	3Q4	$3	6BF6	$3	6V6GT	$6	12D8S	$3	45	$5	801	$3	6-100-	
1G4	$4	3Q5	$3	6BH8	$5	6W4	$4	12DL8	$3	45S/VT-		EAF-		AL	$450
1G5	$4	3S4	$2	6BJ6	$5	6W7	$4	12DT5	$3	52	$6	801	$6	3X2500-	
1G6	$4	3V4	$2	6BK5	$3	6X4	$6	12DV5	$4	46	$7	803	$38	A3/8161	
1H4	$5	54G	$12	6BK6	$5	6X5	$4	12DV8	$3	47	$8	805	$21		$200
1H5	$4	5AW4	$3	6BM8	$3	6Y5	$4	12EG6	$4	48	$8	807	$10	304TH	$3
1H6	$4	5AZ4	$4	6BQ5	$4	6Y6	$6	12F5	$3	49	$6	810	$28	ML531	$40
1L4	$4	5BR8	$3	6C4	$5	6Z4	$3	12F8	$3	50	$6	812A	$16	2E26	$4
1L5	$4	5CH8	$3	6C5	$9	6Z5	$2	12H6	$3	50A5	$4	829A	$19		
1L6	$13	5R4	$4	6C6/77	$4	6Z7	$2	12J5	$5	50C5	$4	833A	$67		
1LA4	$4	5T4	$8	6D6/78	$4	7A4/XXL	$3	12K5	$3	50C6	$4	837	$16	8012	$18
1LA6	$5	5T8	$5	6D7	$4	7A5	$3	12K7	$3	50EH5	$4	845	$35	CK5886	$3
1LB4	$5	5V3	$5	6D8	$4	7A6	$3	12K8	$3	50HK6	$4	865	$4	5915	$3
1LC5	$5	5V4	$5	6DK6	$4	7A7	$3	12SA7	$3	50L6GT	$6	866A	$9	5963	$3
1LC6	$4	5V6	$4	6DT8	$4	7A8	$3	12SC7	$3	50X6	$6	868	$5	6101	
1LD5	$4	5V8	$4	6E5	$4	7B4	$3	12SF5	$3	50Y6	$6	884	$6	6J6	$4
1LE3	$5	5Y3	$4	6E6	$4	7B5	$3	12SG7	$3	VT-52	See	930	$3	6201	$3
1LF3	$5	5Z3	$5	6E7	$4	7B6	$3	12SH7	$3	45S	$6	954	$7	6267	$3
1LC5	$5	6A3	$6	6EJ4	$13	7C6	$3	12SJ7	$4	53	$5	955	$7	6550	$8
1LH4	$5	6A4	$6	6EJ7	$4	7C7	$3	12SK7	$3	55	$6	956	$7	6973	$3
1LN5	$5	6A5	$4	6EV8	$3	7E6	$3	12SL7	$3	56	$4	958	$3	7027A	$7
1N5	$4	6A6	$4	6EX6	$3	7E7	$3	12SN7	$3	CK56	$6	991	$3	7247	$4
1N6	$4	6A7	$6	6F4	$3	7C7	$3	12SQ7	$3	KT66	$10	FM-		7591	$4
1P5	$4	6A8	$5	6F5	$6	7F7	$3	12SR7	$3	57	$4	1000$	$10	7869	$3
1P40	$10	6AB4	$3	6F6	$8	7F8	$4	12W6	$3	58	$4	1201	$3	8005	$3
1Q5	$4	6AB7	$3	6F7	$12	7G8	$3	1223	$3	59	$5	1203A	$3	8012	$3
1R4	$3	6AC5	$3	6F8	$12	7H7	$3	14A4	$3	KT88	$10	1280	$3	8525	$4
1R5	$7	6AC7	$3	6G5	$4	7J7	$3	14A7	$3	70L7	$3	1299	$3	9001	$5
1S4	$2	6AE6	$5	6G6	$3	7K7	$3	14AF7	$3	71A	$6	1367	$3	9002	$5
1S5	$2	6AE7	$5	6H6	$2	7N7	$4	14B6	$3	75	$6	1613	$3	9003	$5
1T4	$4	6AF4	$7	6J5	$3	7Q7	$3	15	$7	VR-75	$2	1614	$6	VR105	$3
1T5	$3	6AG5	$5	6J6/6101	$3	7S7	$3	17EW8	$5	76	$3	1616	$3	CC10/	
1U4	$3	6AG7	$13	6J7	$7	7T7	$3	19	$7	77	$4	1619	$8	4B	$4
1U5	$3	6AH4	$3	6J8	$3	7Y4	$3	19T8	$8	78	$4	1620	$8		
1V	$4	6AH6	$9	6K6	$3	7Y7	$3	22	$5	79	$3	1624	$12		
1V2	$3	6AJ5	$3	6K7	$3	7X7	$3	24A	$4	80	$5	1625	$8		
2A3	$8	6AK5	6	6K8	$3	8LT8	$4	25A6	$3	81	$6	1635	$6		

915-653-1720

WHOLESALE RETAIL

SAM PRICE
1102 N. CHADBOURNE ST.
SAN ANGELO, TEXAS 76901

IF WE DONT HAVE IT WE WILL TRY TO FIND IT FOR YOU

EDISON PHONOGRAPH PLAYS THE THICK EDISON DISK RECORDS, TABLE MODEL CABINET NEEDS REFINISHING AND MINOR REPAIRS WITH 55 OR 60 RECORDS $200.00

WURLETZER JUKE BOX 200 SELECTION STEREO PHONOGRAPH NO SHIPPING YOU COME GET IT, NEEDS SOME REPAIR LOOKS AND SOUNDS GOOD ---------- $400.00

RIDER MANUELS [illegible] $10.00
ALL OTHERS ARE ---------- $10.00 ea.

WE HAVE SEVERAL SERVICE MANUELS ON WURLETZER ROCKOLA COIN OPERATED PHONOGRAPHS LET US KNOW YOUR NEEDS----------

WE ALSO HAVE SERVICE MANUELS ON MANY ELECTRONIC ORGANS----------

WE RESTORE MANY OF THE ANTIQUE PUMP ORGANS ALSO HAVE A GOOD STOCK OF BRASS REEDS FOR THESE ORGANS FROM $3.50 TO $5.00 ea.

WE RESTORE RADIOS, AND PHONOGRAPHS AND ORGANS OF ALL AGES.

WINDCHARGER 32V 1500 WATT NOW OPERATING IN GOOD CONDITION ---------- $750.00

WINDCHARGER 32V 1500 WATT REPAIRABLE PROP AVAILA, ----------$275.00

POWER PANEL AND LARGE BATTERIES FOR WINDCHARGER NO SHIPPING ----------$175.00

WE HAVE A FREE BONUS GIFT TO GO ALONG WITH ALL ORDERS IF YOU WANT IT, A LIST OF THE TUBES WITH VT NUMBERS CROSSED TO STANDARD BRAND NUMBERS.

TYPE 864 TUBES MAKE A GOOD SUBSTITUTE FOR WD-11
WE HAVE A FEW OF THESE IN STOCK -----AT $10.00ea NET

TYPE 40 AND 203A TUBES ARE GOOD SUBSTITUTES FOR 01A TUBES @ ---------- $10.00 NET

VTVM POLYMETER SYLVANIA MODEL 134 ---------- $15.00
FIELD STRENGTH METER UHF-VHF RADION CORP---- $25.00
BATTERY ELIMINATOR KELLOGG ITT MOD, [illegible] ---- $ 20.00
R.F. SIGNAL GENERATOR KNIGHT MODEL [illegible]---- $35.00
MOBILE LINER PHILCO MODEL 5005 ---------- $15.00
R.F. SIGNAL GENERATOR, TRIPLETT MODEL 3433 -- $35.00
POWER SUPPLY 65 KV-1ma. THETMAN TV CORP LAB-60 $75.00
CAP, RES, BRIDGE. CLOUGH BRINGLE Co. MOD 130---$20.00
R.F. SIGNAL GENERATOR, PRECISION APP, MOD E200 $25.00
POWER SUPPLY 16 TO 52 V.10 AMP. RAYTHEON W-7169 $60.00
GEIGER COUNTER NUCLIER CORP. MOD, 1613A ---- $25.00
AUDIO SIGNAL GENERATOR, CLOUGH BRINGLE Co. MOD 179A $30.
cap, RES. BRIDGE SUPERIOR INST. CO. MODEL 76---$50.00
XFORMER AUTOMATIC VOLTAGE CONTROL ACME MOD T18110 ----------$30.00
[illegible] $30.00
OSCILLOSCOPE USM-24 MOD 05-51 ---------$85.00
STEREO MULTIPLEX TEST SET SENCORE MX-129 (REPAIRABLE) ----------$160.00
R.F. SIGNAL GENERATOR PRECISION APP. MODEL E200C ---------$25.00
AUDIO SIGNAL GENERATOR, 50 to 1000 cy BU P84103 ---------- $60.00
POWER SUPPLY 400V. at 600 ma. KEPKO CO.----------$90.00
FREQ. METER DAVEN ELEC. CO. 20 to 60 K MOD 838C ----------$300.00
[illegible]
AUDIO LEVEL TEST PANEL PREC CORP. MODEL ----------TS629 $30.00
R.F. SIGNAL GENERATOR, CLOUGH BRINGLE CO. MODEL OC ---------$20.00

915-653-1720

ANTIQUE TELEGRAPH KEY WITH CARBON CONTACTS MOUNTED ON A FORM OF INSULATION ATTACHED TO A WOOD BASE. THIS KEY WAS FOUND IN A DUGOUT AT WAKE ISLAND AFTER WORLD WAR TWO ----------$20.00

SAM PRICE
1102 N. CHADBOURNE St.,
SAN ANGELO, TX. 76901

ATWATER KENT RADIO

MODEL # [illegible] $[illegible]
MODEL # [illegible] $[illegible]
MODEL # 42 ELECTRIC --------- $50.00

PHILCO

A musical instrument of quality

MODEL # 20 ---------- $50.00
MODEL # 96 -----WITHOUT CABINET $35.00
PHILCO CONSOLE AUTOMATIC TUNING WITH REMOTE TUNING BOX ---------- $300.00

RCA RADIOLA

MADE BY THE MAKERS OF THE RADIOTRON

[illegible] $[illegible]
[illegible] $[illegible]
RADIOLA 18 ---------- $90.00

ATWATER KENT CHASSIS
MODEL # 55C -------$37.50
MODEL # 188 ------ $40.00

AUDIO-PHONE HORNE SPEAKER ---------- $60.00

[illegible] $[illegible]

RCA SPEAKER # 100A $25.00

ZENITH TRANS-OCIANIC
MODEL # 8G005YT21--$85.00

[illegible]

TRUETONE MODEL 2621USES FARM PACK BATT --$40.00

ALL PRICES F.O.B. SAN ANGELO.

HERE'S A NEW ONE

From the Rochester, N. Y. *Times-Union* of Feb. 6, we have this advertisement, "We are the authorized Service Station for the Kodel HORNCHARGER." Now, Grandpop, whenever your set isn't perking just as it did back in 1872, look over the loud speaker and give the horn a little pep with this new gadget. It will work wonders, we know.

Contributed by John C. Heberger

HOW'S THIS FOR SPEED?

Spanish influence as shown in the *Canadian Radio Trade Directory* of 1925, in the following advertisement "Samson Neutralizing Condenser: Neutralizes in a few MONTHS; once set it stays set." Well we should hope that it would stay set after taking all that time to get it fixed at the proper place. Have patience, boys.

Contributed by W. J. Rowles

NO MORE WORRIES

From an advertisement in the *Radio Broadcast Advertiser* of February we have a set advertised with "Built-in LOOP Speakers." Now that's what we consider a step in the right direction. Away with all these worries of whether the loud speaker is feeling well tonight! The faithful loop will bring to your ears the music just as well. Hooray!

Contributed by E. W. Perkins

Radio News for May, 1926

BUILD

1926 ad

Worlds Record SUPER 9

the RECEIVER that Holds 4 World Records All Fully Verified

(1) Longest distance ever received on a loop aerial—8,375 miles.

(2) Most consistent reception of stations 6,000 to 8,000 miles distant—117 programs in three months.

(3) In 2¼ hours, brought in six different stations—all over 6,000 miles distant.

(4) Received greatest number of stations located 6,000 or more miles away.

NEW REPORTS

Dr. Sidney Kuh of Chicago, Illinois, writes: "Have certificate showing reception 2LO London on my Worlds Record Super 9 in spite of adverse conditions test week —some accomplishment for any receiver."

Last year a Worlds Record Super 9 brought 2LO into Chicago with loud speaker volume on a loop.

Mr. M. P. Beaudoin, Winter, Wisconsin, writes: "Constructed Worlds Record Super 9 with your parts and instructions—On North Woods trip picked up 118 stations in six hours—Got Australia, Mexico, Alaska and Cuba—California stations came in like locals—Have tried best receivers made—Yours (The Worlds Record Super 9) outpoints them all."

ALL THE PARTS

Send for data on all the parts necessary to make an exact duplicate of this marvelous receiver together with a complete book of instructions, blue prints, etc.

FREE Mr. Scott's story of the development of his master receiver and proofs of its record-breaking performances sent on receipt of stamped and addressed envelope.

Dealers and set builders, write for discounts.

SCOTT RADIO LABORATORIES
CRILLY BLDG. CHICAGO, ILL.

1926 ad

The Daven Super-Amplifier

for volume and tone quality
3 STAGES RESISTANCE COUPLED
ECONOMICAL DISTORTIONLESS
Easily added to any set
Saves Several Hours' Assembly
For Sale by All Good Dealers

"A man's voice, anyhow"

NO way of amusing people is so sure of results as by means of an Edison Phonograph. Start one anywhere and everybody gathers around it. It is easy to entertain with an Edison. It will amuse any kind of a gathering.

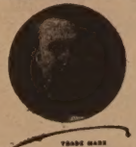
The EDISON PHONOGRAPH

places music, formerly available only to the few, within reach of the many. No ear is too critical and no pocket-book too limited to enjoy the entertainment it affords.

There's Lots of Good Fun in the August Records

But the twenty-four new Records for August are not made up entirely of comic songs and the wit of clever comedians. There are good sentimental ballads, well-rendered band and orchestra selections, instrumental solos, and some sacred selections—the best of the new music and the best of the old. On July 25th they will be on sale at all Edison stores. Your dealer will be glad to play for you any of the following Records that you want to hear.

9890 Sweet Sixteen March (Kerry Mills) . . . . . Edison Military Band
9891 Only an Old Fashioned Cottage (A sentimental home ballad) (Solman & Hayden-Clarendon) . . . . . Manuel Romain
9892 It Always Comes with the Summer (Serio-comic song) (Solman & Lamb) . . . . . Dorothy Kingsley
9893 Lady Binnie and the Shores of Lake Erie (Violin) Original . . . . . William Craig
9894 I Want to be Loved Like a Leading Lady (The comic song success in "The Girl Behind the Counter") (Wade & West) . . . . . Ada Jones
9895 Yankee Doodle Comes to Town (From "The Yankee Prince") (George M. Cohan) Billy Murray
9896 By the Old Oaken Bucket, Louise (Davis & Jones) . . . . . Frederic Rose
9897 Forest Whispers (Losey) . . . . . Edison Symphony Orchestra
9898 Mother Hasn't Spoke to Father Since (Schwartz & Jerome) . . . . . Arthur Collins
9899 The Home Over There (Sacred selection) (O'Kane & Huntington) . . . . . Edison Mixed Quartette
9900 Let Me Hear the Songs My Mother Used to Sing (Gabriel & Gordon) . . . . . Byron G. Harlan
9901 Blue Violets (Eilenberg) . . . . . Edison Concert Band
9902 When the Autumn Moon is Creeping Thro' the Woodlands . . . . . Will Oakland
(This Record introduces a new Edison artist, Will Oakland. He has a counter-tenor voice of bell-like sweetness, which is heard to excellent advantage in this pretty, romantic ballad.) (Solman & Rosenfeld.)
9903 A, B, C's of the U.S.A. (Unique alphabetic duet) (George M. Cohan) Ada Jones and Billy Murray
9904 I'm Savin' Up My Money for a Rainy Day (A genuine comic rag-time song) (Wenrich & McDonald) . . . . . Edward Meeker
9905 "Dialogue"—Flute and Clarinet (An animated musical conversation between a flute and a clarinet) (A highly amusing Record) Hamm . . . . . Edison Symphony Orchestra
9906 All for Love of You (Ball & Reed, authors of "Love Me and the World is Mine") Harry Anthony
9907 A High Old Time in Dixie (Negro duet) (Schleiffarth & Lowen) . . . . . Collins and Harlan
9908 For the Red, White and Blue (An inspiring song of our new navy) (Rosenfeld) James F. Harrison
9909 The Kerry Mills Barn Dance (Kerry Mills) . . . . . Edison Symphony Orchestra
9910 I'm the Man (Camp & Norton) . . . . . Bob Roberts
9911 Fun at the Music Counter (A laugh-making burlesque on familiar scenes at a sheet-music counter) Original . . . . . Jones and Spencer
9912 Finnegan's Flat (A laughable descriptive sketch) Original . . . . . Steve Porter
9913 "Smarty" Medley . . . . . Edison Military Band

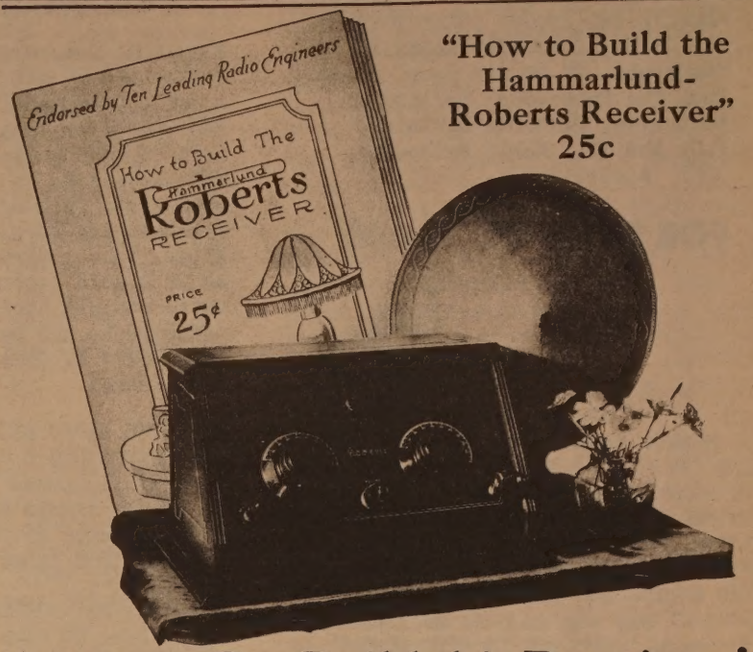


Ask your dealer, or write to us, for the new catalogue of Edison Phonographs, THE PHONOGRAM, describing each Record in detail; the SUPPLEMENTAL CATALOGUE, listing the new August Records, and the COMPLETE CATALOGUE, listing all Edison Records now in existence. Records in all foreign languages.

National Phonograph Co., 11 Lakeside Ave., Orange, N. J. Thomas A. Edison

Circa 1908 ad

1926 ad



"How to Build the Hammarlund-Roberts Receiver" 25c

Anyone Can Build this Receiver!

MOST books on how to build radio receivers are difficult to grasp because the sets they describe are intricate in design and involve complicated wiring and assembling.

Simplicity of design and ease of assembly are notable features of the Hammarlund-Roberts Receiver. Thousands have built it. Hundreds of testimonials from actual users pay tribute to its remarkable performance in volume, distance, selectivity and tone quality.

You can build the Hammarlund-Roberts from the simple, non-technical instructions in this book. You will have a laboratory designed receiver equal to any factory-built set and at half the price. Designed by ten of the country's leading engineers and backed by these leading manufacturers:

All-American Radio Corp., Alden Manufacturing Co., Radiall Company ("Amperites") Carter Radio Co. Union Radio Corporation
International Resistance Co., ("Durham Resistors") Westinghouse Micarta Hammarlund Mfg. Co., Inc.

Send for this book, giving full instructions on wiring, assembling and operating the Hammarlund-Roberts Receiver. Price 25 cents. Below are some of the products used in the famous Hammarlund-Roberts.

Rowland-Loris ALL-AMERICAN TRANSFORMER

Hammarlund-Roberts, 1182-C B'way, N. Y. City

AMPERITE

Hammarlund Roberts

Hammarlund

NA-ALO

Scandalous

From Philadelphia comes the story of a bird fancier who used the Phonograph in teaching his young parrots to talk. Having made a Record containing "Pretty polly," "Polly's hungry" and other remarks which delight the souls of parrots, he devised a magnetic arrangement which, with an electric motor, enabled him to shut his pupils up in a room while the Phonograph repeated to them by the hour. Needless to say, the birds learned very rapidly under this system.

But the day of reckoning came when the proprietor put his son in charge of the parrots' education. The boy entered into his new duties with all the enthusiasm of youth and decided that, while he was at it, he would teach the pupils something worth while. So it was that his father was greatly surprised by the receipt of a letter from a woman customer who stated that she positively refused to keep the parrot which she had just purchased.

When the bird was duly returned, he startled the pious proprietor by screaming pointed phrases from the latest and most questionable songs. The son's fate is not known—it was probably too horrible for print.

Phonogram, November 1913

MART

Classified ad rate: 6¢ per word.
Photo ads: $2.00 extra.

MISC.

"RADIO AGE," a radio magazine devoted to wireless and early broadcast eras. Contains interesting articles written by collectors, articles published in early radio magazines, lots of reprints of famous radio ads, and a classified section for buying or selling radio and electronic items. Subscribe at $7.50 per year for ten issues. Mail check or money order to Radio Age, 1220 Meigs Street, Augusta, Georgia 30904.

PROFESSIONAL-CW operators, retired or active, commercial, military, Gov't, police, etc., invited to join Society of Wireless Pioneers, W7GAQ/6, Box 530, Santa Rosa CA 95402.

MISC.

MACHINE AND RECORD COLLECTORS PUBLISHES BI-MONTHLY MAGAZINE. Membership $8.00 per year, offer from The Phonograph Society of Australia, Victoria Division, P.O. Box 321, Morth Melbourne, 3051 Australia.

FOR SALE OR TRADE

IMPORTANT! PLEASE CUT THIS OUT AND SAVE IT!
FOR SALE AND WANTED: EARLY PHONOGRAPHS, MUSICAL BOXES, CRYSTAL RADIOS, GRIND ORGANS, MECHANICAL TOYS, OPTICAL TOYS, ANIMATED CLOCKS AND WATCHES, SINGING BIRD BOXES, AND ITEMS RELATED TO THE ABOVE. I pay top cash as well as sell and trade. SPECIAL TO "THE HORN SPEAKER" READERS...LARGE ILLUSTRATED LIST OF ITEMS AS ABOVE FOR SALE FOR ONLY ONE DOLLOR AND A SELF ADDRESSED STAMPED ENVELOPE WITH 24¢ POSTAGE. Leonard, P.O. Box 127, Albertson N.Y. 11507. Tel: 516 621-2581.

FOR SALE: Send $1.00 and SASE for each of the following reprints;
1. Radiola 111A service manual.
2. Eight famous 1-tube Circuits (Gernsback) - Ultra-Audion, Harkness Reflex, Flewelling Super-regen, etc. All specs included for operation with type 30 tube.
3. Easy one tube Regen Radio (Gernsback) - complete plans with instructions for making simple variocoupler.
4. All-wave crystal set - Complete plans (Gernsback).
5. Schematic & servicing info - any early auto radio

NEW BOOK-Crystal Sets - A collection of photos, old ads & articles, projects, unusual sets. Limited edition $3.50. N. Hertz, 186 Kensington St., Brooklyn N.Y. 11235.

FOR SALE: RADIOS - 1924 - 50s. Over 100 - tubes new, some 20,000 used some 10,000 all types, 99s to some modern TV - commercial - industral ham - foreign - recorders phonographs wire tape - parts - equipment. All one price $28,000.00. See to appreciate. If interested call or write Harlie M. Cox, 1429 E. Portland St., Phoenix, Arizona 85006. Ph: 602 252-2456.

FOR SALE: Magnavox TRF 5, or Pearson 5, (no tubes) $40.00. Avg. A.K. horn, works $30.00. Ross Mason, 641 S. Georgia, Mason City, Iowa 50401.

FOR SALE: Small Radio Collection. Send SASE for list. Paul Giganti, W6GVY, 2429 San Carlos Ave., San Carlos CA 94070.

MAIL AUCTION: Grebe CR9 mint condition. Steve Davis, 809 W. Ave. F, Garland, Texas 75040.

FOR SALE OR TRADE

FOR SALE: Motorola 7" Electrostatic deflection TV set $100. Radios; AK model 20, AK model 33, both refinished-look fine, Crosley Trirdyn, Grebe Synchrophase, all sets work, W/O tubes $90. @. RCA 849 Modulator tube, good filament $35., WE-211-E Transmitting tube open filament $7.50. Take interesting trades such as WE Double button mike, AK Tapped Variocoupler, horn speakers, cylinder phonographs and parts. Paul C. Crum, W9LC, 6272 N. Cicero Ave., Chicago, Ill. 60646.

NEW 1976 RADIO ANTIQUER'S DIRECTORY AND COLLECTORS'S GUIDE SERVICES QTR, covers all phases from A to Z, over 75 pages, alwsys being revised, STANDARD copy $5.00, all PHOTO'S in living COLOR (where applicable) $9.95.
LATEST FLEA MARKET QUARTERLY DIRECTORY, Lito, over 50 pages getting bigger, covers all markets in Alphabetical order, USA/CANADA, others know $2.25.
1924-30 ORIGINAL ATWATER KENT FACTORY SERVICE MANUAL ENCYCLOPEDIA, revised and reprinted, 225 pages, 300 illustrations which cover everything you need to know about all models, speakers, accessories, 3 volumes, BEST SOURCE EVER $15.00.
1920-33 8½ x 11 CARBON RESISTOR CHART, in living COLOR, 5% (50 to 10 megohms) solve all your mystery resistor problems, suitable for framing $2.25 ea.
LATEST RADIO/WIRELESS RARE TUBE/REPRINT CATALOG, New book reprint list contains 30 Factory service manuals, books, catalogs never offered, HOW TO: $1.00.
All sent Book Rate, $3. per book First Class, Special Handling 70¢, Insurance EXTRA.
CANADIANS: same rates USA, Add $2.50 your check exchange rate,order over $30. FREE BONUS, From: HISTORICAL RADIO SERVICES, Box 15370, Dept. HS9, Long Beach CA 90815.

FOR SALE: Ghiradi's 3rd Trouble Shooter HB $15.00. Motorola 9" table TV Mdl. 9T1, Motorola 7" mah. table TV mdl. VT-71MB-A, both good externals, not working $35.00 each and shipping. Send SASE please. Mike Winney, 606 David Dr., Prescott, Ariz. 86301.

FOR SALE: AK model 5 Breadboard, board not original, beautiful. Best offer.
WANTED: Amrad det. Amp. unit. My coils for Grebe CR-18 don't fit. Wish to swap with others in same fix. R. Robbins, 253 Standish Rd., Merion Station PA 19066, (215) 664-2178.

FOR SALE: New tubes in original cartons -- UX-99, UX-199 $6.00 ea. 01A $18.00 ea., UX200 $5.00 ea., 71A $5.00 each. Order as many as you need and please include $1.00 to help with the postage. Gary Probst, 336 West Church St., Lock Haven PA 17745.

FOR SALE OR TRADE

ANTIQUE TELEVISION collection: 38 different models from 1930s, 1940s one or all $75.00 up each. List & picture $1.00. Seidel, 614 Grove Lane, Santa Barbara CA 93105. Phone: 805 687-7967. Want horn phonographs any quanity CASH.

ATWATER KENT instruction book Vol. 2, for models 9 through 24, and models 20-21 compact. (1925) Reprint comparable to original. If you haven't seen the original you wouldn't know the difference, offset print, 48 pages. William Huntley, R #2, Box 155, Coatesville, Ind. 46121.

FOR SALE: We have many hours of quality old time radio programs from late '20s to mid '30s. Fun to play the actual old programs thru the horn speaker -- just like back when. Custom made tapes any method. Blalock's Sound Library, 609 Blue St., Richland, Wash. 99352.

FOR SALE: Solid State power supply for early battery operated radios. I have been making the same model for over four years with many satisfied customers. For spec sheet write: G. B. Schneider, 6848 Commonwealth Blvd., Parma Hgts, Ohio 44130.

FOR SALE: 5, 50 & 250 Watt early transmitting tubes. Pocket watch type battery & circuit testers. Very early rare phones plus other selected GOODIES. Roland Matson, 388 Concord Road, Bedford, Mass. 01730. Tel: 617 663-3877 after 5 PM.

TRADE: AK 10C, Lambert crystal set (original box, instructions), Sober regenerative, Radiola 25.
WANTED: Breadboards, Grebes, Kennedys and Aeriola Jr.
Wallace Geary, 209 W. Saunders, Mt. Pleasant, Iowa 52641.

BLANK BAKELITE STOCK cut to size, 1/8" to 1/2" thick. Fabricating and engraving services available. SASE for pricing sheet.
Norman A. Parsons, 22 Forest St., Branford CT 06405, Phone: 203 488-4267.

FOR SALE OR TRADE: Victor "Florenza" Orthophonic phonograph with built in Radiola 25. All original in good condition, $200. Will trade.
Larry Dupon, 616 W. Surf, Chicago, Ill, 60657. Phone: 312 227-1658.

FOR SALE OR TRADE

FOR SALE: TV and radio tubes, 25¢ each. Have over 200 different old and new tubes. Some of these tubes are new and some are used. Don't miss out on this bargain. Send $1.00 for complete list and sample tube and also other offerings. Gary Probst, 336 West Church St., Lock Haven, PA 17745.

FOR SALE: Battery radios and horn speakers (Amrad, Clapp Eastham, Golden Leutz, A-K, Magnavox, etc.) SASE for list. Bill Condon, 1434 Princeton, Apt. B, Santa Monica, Calif. 90404.

FOR SALE: MU-RAD MA-12, Grebe CR-8, Federal 110, Amrad Neut., Pilot TV, AC sets, speakers, parts, books and more. Send SASE for list. Richard Cane, 8391 N.W. 21st. St., Sunrise FL 33322.

FOR SALE: Splitdorf Abbey - Very good condition except for top veneer missing. Top refinished. Best offer. N. Hertz, 186 Kensington St., Brooklyn, N.Y. 11235.

FOR SALE: AK 20C $58; Crosley 51 $50; Radiola 3 $50; Philco Cathedral $55; many others, SASE for list. Al Jochem, 2047 College, Quincy, Ill. 62301.

FOR SALE: RCA 33-1/3-78 RPM Variable Pitch 16" Studio Record-transcription lathe, circa 1930's. SASE for details. Charles Liddicoat, 1346 Sycamore Ave., Wilmington DE 19805.

FOR SALE OR TRADE:
Battery and AC radios, etc. Send SASE and your list for mine.
Jim Collings, 2218 Woodard, Abilene TX 79605.

WD11 Adaptors, use UX199, 120, VT24. No wiring changes, Radiola III's battery hook-up included $5.25 pp., 2 for $9.25. Keith Parry, 17557 Horace St., Granada Hills CA 91344.

SELLING out collection of Wireless and Radio Magazines. Over 200 different. SASE. Guy Martin, Box A, Azusa CA 91702.

SEND $1.00 for the newly published booklet "A Pocket Guide to Antique Radio Collecting." Antique Radio Press, Box 42, Rossville IN 46065.

FOR SALE: SASE for descriptive list of early radio and television books. C. Sangerman, P.O. Box 10, Highland Park, Ill. 60035.

RIDERS TRADING POST - trade only Riders volumes 3 to 14 available. We can use any Riders Vols. Send list of Vols you have extra & Vols you need. WD11 & 99/20 REPLACEMENT TUBES-not old style-Guaranteed X99/20-$7.50 V99/20-$10. WD11-$12. Send SASE for details. Will trade tubes or Riders for Silver Marshal Model J dial excutcheon or photo-copy of Hickok AC51 Tube test information. K. Hanson, 3403 East Broadway, Long Beach CA 90803.

WANTED

WANTED: Original cases for Freed-Eisemann FE-15 (panel 19"L, 9" high, 7" deep) and Grebe CR-9; Original "ivory" style DeForest tuning dials, interpanel coils (150 and 75 turns); original Catacomb (working) and loop for Radiola 25; WE 216-A Spiked "tennis ball" tube (working). Wallace Geary, 209 W. Saunders, Mt. Pleasant, Iowa 52641.

WANTED: Top prices paid for factory crystal sets, high quality headphones (not Baldwin Etc.) and unusual Horn speakers Thon Silk Shade Lamp Speaker.
NEED: A national Monodyne Model GT-1 with or without WD-12 tube.
Jim Hill, 8740 N. Burrage, Portland, Oregon 97217.

WANTED: Pod, type TA for Atwater Kent model 10 (4560) with black base and brown cover, pod holds 3-UV201's. Also need 5 Radiotron UV201's, have brass bases and pins and a tip on top. Prefer both items to be in new or in excellent condition.
Ray Sieracki, 48 Hamilton St., Lackawanna, N.Y. 14218.

WANTED: Any radio fan magazines. Also, any radio magazine with commercial broadcast or star information. Examples--"Radio Guide," "Radio Stars," "Radio-TV Mirror", etc. Also Photoplay magazines. 1 or 100. Fred L. Davis, 5106 Skippy St., Memphis, Tenn. 38116.

JOHN GRIFFIN WANTS TO BUY pre-1930 battery operated radios. Must be in choice condition. Send photo, price, and phone number. Photos returned if no deal is made. 2937 W. Indian School Road, Phoenix, Arizona 85017. Phone: 602 263-7658.

WANTED: RCA four-volume Tube Handbook HB-3, if complete. Also interested in various other RCA publications, especially about early color television. Also need RCA picture tubes: 15GP22, 12AP4, 7DP4. Carleton Sarver, 256 West 88th St., New York, NY 10024.

WANTED: Owners of Freshman-Masterpiece 1924 or 1925, either a clear B & W polaroid or full-scale drawing of above and beneath chassis layout and wiring. Will gladly defray your costs advised. Darcy Brownrigg, Chelsea, Quebec, JOX INO, Canada.

WANTED: Crosley Pup, Cathedral radios, pre-1950 televisions and mechanical scanning disc televisions. Send information and price. Mark Robinson, P.O. Box 38068, Cincinnati, Ohio 45238.

WANTED: A record table for a model VV-X Victor Talking Machine.
FOR SALE: UX-01A tubes at $5.00 each or $50.00 per dozen. Dan Gaidosz, 342 West River Road, Orange, Conn. 06477.

WANTED

WANTED: Ryders vol. 20 & up. Will trade vols. 6-10 one for one or sell set $50.00. SASE please.
Fada #35 elec. PS needed, uses 81 tubes. Will buy or trade. Mike Winney, 606 David Dr., Prescott, Ariz. 86301.

WANTED: Crosley Pup radio, VT 158 tube, Xtal Det & sets; SCR 131-161 (sig. cord), Lee Kemp, RFD 10, Frederick, Maryland 21701. Phone (301) 662 3482.

WANTED: Radio, wireless, land telegraph and telephone sets, parts, books, magazines, etc., pre-1930. Bill Nangle, 761 No. 29th. St., Milwaukee Wis. 53208.

WANTED: Early rare microphones 1900 to 1925. Have good selection of early battery radios, XTAL sets and horns to trade. Bob Paquette, 443 N. 31 St. Milw., Wis. 53208.

WANTED: Signal Corps radio equipment prior to 1924. Cash or trade Federal 110, AK 12, etc. August Link, 305 Wisconsin Ave., Oceanside CA 92054. Phone: 714 722-6162.

WANTED: Philco Grandfather Clock Radio; Philco Radios in general. Contact Carl Gorodetzky, 3606 Wilbur Place, Nashville TN 37204. Phone: 615-383-6440.

WANTED: RADIO NEWS: POPULAR RADIO and RADIO BROADCAST magazines. GRIMES RADIO model 4DL Inverse Duplex. J. Albert Warren, Box 279, Church St., Waverly PA 18471.

WANTED: Radio Magazine - all 1920-1921, Radio Broadcast - Nov. 1926, Dec. 1928, many Wireless Age 1921 to 1925. Buy or trade. Thompson, 2930 Delavina, Santa Barbara CA 93105.

WANTED UNASSEMBLED KIT radio in original box. Boxed parts of any kind. Sets, parts, books, magazines of the 1920s. W6ME, 4178 Chasin St., Oceanside CA 92054.

WANTED: Kadette, Jr. (red) AC-DC broadcast band receiver. Built circa 1934 by International Radio Corp. Wallace H. Volkman, 1121 Furlong, Belmont CA 94002.

WANTED: Above and below chassis wiring layout drawing for Freshman Masterpiece 1925. Darcy Brownrigg, Chelsea, Quebec, JOX INO Canada.

WANTED: Watch case style voltmeters, ampmeters and single earphones. H. Moncure, 47-734-2 Hui Kelu, Kaneohe, Hawaii 96744.

WANTED: Crosley V, 50 or 52 in restorable condition. J. Alford, 3184 Lockmoor, Dallas TX 75220.

WANT TO BUY: RCA Victor model #R-99 amplifier - High Fidelity Electrola second production. Harlie M. Cox, 1429 E. Portland St., Phoenix, Arizona 85006.

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1A6	$4	1L6	$8	2A5	$4	6AB4	$3	6F7	$6	6T7	$4	12A6	$4	14C7	$4
1A7	$3	1LA4	$4	2A6	$4	6AB7	$3	6F8	$4	6U5	$5	12A7	$4	14E6	$4
1B4	$4	1LA6	$4	2A7	$5	6AC5	$3	6G5	$5	6U7	$5	12A8	$4	14E7	$4
1B5	$4	1LB4	$4	2B7	$4	6AC7	$3	6G6	$3	6V6	$2	12AH7	$3	14F7	$4
1B7	$4	1LC5	$5	2E5	$5	6AK5	$2	6H6	$2	6V7	$4	12AT6	$2	14F8	$4
1B8	$4	1LC6	$4	2X2	$3	6AL5	$3	6J5	$3	6X4	$2	12AT7	$2	14H7	$4
1C1	$4	1LD5	$4	3A4	$3	6AL7	$5	6J6	$2	6X5	$2	12AU6	$2	14J7	$4
1C5	$3	1LE3	$4	3A5	$3	6AQ5	$2	6J7	$4	6Y5	$3	12AU7	$2	14N7	$4
1C6	$3	1LF3	$4	3A8	$4	6AT6	$2	6J8	$4	6Z4	$3	12AV6	$2	14Q7	$4
1C7	$5	1LF4	$5	3C6	$4	6AU6	$2	6K5	$3	6Z5	$3	12AX7	$2	14R7	$4
1D5	$5	1LG5	$4	3LF4	$5	6AV6	$2	6K6	$3	6Z7	$2	12B7	$4	14W7	$4
1D7	$5	1LH4	$4	3Q5	$3	6AX5	$2	6K7	$4	6ZY5	$3	12B8	$4	14X7	$4
1E5	$5	1LN5	$4	3V4	$3	6B4	$5	6K8	$4	7A4	$4	12BA6	$2	15	$7
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						6C6	$4	6S4	$4	7B7	$4	12L6	$2	25Z5	$3
						6C7	$4	6S8	$4	7B8	$4	12Q7	$4	25Z6	$3
						6C8	$4	6SA7	$3	7C5	$3	12S8	$3	26	$6
						6D6	$4	6SB7	$3	7C6	$4	12SA7	$3	26A6	$4
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						6D8	$4	6SD7	$3	7E6	$4	12SF5	$3	27	$4
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						6F6	$4	6SK7	$3	7L7	$4	12SL7	$3	34	$4
						6F7	$6	6SL7	$3	7Q7	$4	12SN7	$3	35	$4
						6F8	$4	6SN7	$2	7R7	$4	12SQ7	$3	35A5	$4
						6G5	$5	6SQ7	$3	7S7	$4	12SR7	$3	35B5	$2
						6G6	$3	6SR7	$3	7V7	$4	12V6	$3	35C5	$2
						6G7	$4	6SS7	$3	7W7	$4	12X4	$2	35L6	$3
						6H6	$2	6ST7	$3	7X6	$4	12Z3	$2	35W4	$2
						6J5	$3	6SU7	$3	7X7	$4	14A4	$4	35Y4	$4
						6J6	$2	6SV7	$3	7Y4	$4	14A5	$4	35Z3	$4
						6J7	$4	6T7	$4	7Z4	$3	14A7	$4	35Z4	$4
						6J8	$4	6U5	$5	10	$7	14B5	$3	35Z5	$3
						6K5	$3	6U7	$5	12A5	$4	14B6	$4	35Z6	$4
						6K6	$3	6V6	$2	12A6	$4	14B8	$4	36	$4
						6K7	$4	6V7	$4	12A7	$4	14C5	$3	37	$4
						6K8	$4	6X4	$2	12A8	$4	14C7	$4	38	$3
						6L5	$4	6X5	$2	12AH7	$3	14E6	$4	39	$3
						6L6	$3	6Y5	$3	12AT6	$2	14E7	$4	40	$7
						6L7	$4	6Z4	$2	12AT7	$2	14F7	$4	48	$4
						6N5	$4	6Z5	$3	12AU6	$2	14F8	$4	49	$4
						6N6	$4	6Z7	$2	12AU7	$2	14H7	$4	50	$7
						6N7	$4	7AE7	$4	12AV6	$2	14J7	$4	50A5	$3
						6P5	$3	7AG7	$4	12AX7	$2	14N7	$4	50B5	$2
						6Q7	$4	7B4	$4	12J5	$3	14Q7	$4	50C5	$2
										12J7	$4	14R7	$4	50C6	$4
												14W7	$4	50L6	$3
												14X7	$4	50X6	$4
														50Y7	$4
														51	$4
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														89	$4
														117L7	$5
														117M7	$5
														117N7	$7
														117P7	$7
														117Z3	$4
														117Z4	$4
														117Z6	$4
														485	$5
														884	$7
														950	$5
														951	$5
														954	$4
														958	$4
														1201	$4
														1203	$4
														1232	$4
														1273	$4
														1852	$3
														1853	$3
														9002	$3
														9003	$3
														9004	$4
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SEPTEMBER 75c

THE HORN SPEAKER

1976

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Radio News for May, 192
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